OpenCV- Working with OpenCV

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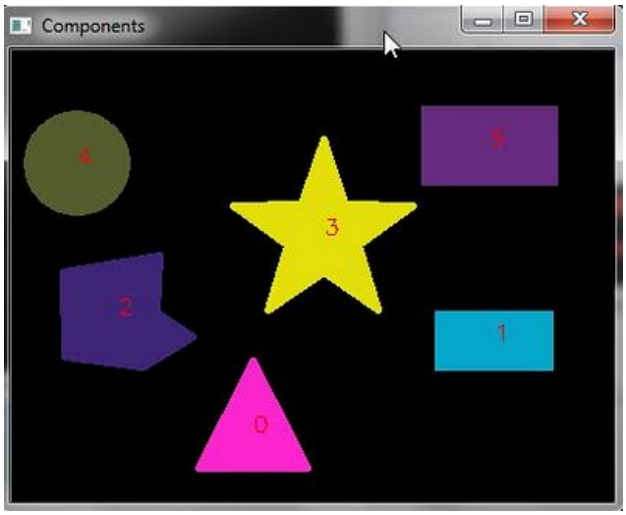
Saturday, September 17, 2011

Blobs with opencv (internal function)

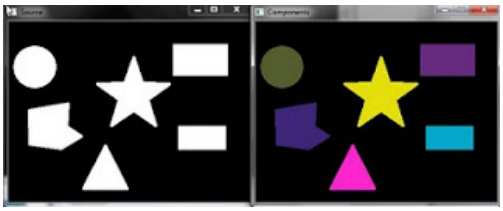


There are many open source opencv BLOB libraries that you can use. i have tried several of these, however because of the 64 bit machine that im using recompiling these are very troublesome.

If you have heard of these libraries:

1. "cvBlobsLib": http://opencv.willowgarage.com/wiki/cvBlobsLib
2. "cvBlob": http://code.google.com/p/cvblob/
3. "Bloblib" by Dave Grossman (also referred to as "Blob Analysis Package"):
   Go to http://tech.groups.yahoo.com/group/OpenCV/files/

You will know that opencv also has a built in function that can help you find blobs using cv::findContour and see some statistics using the cv::moments.
eventually make these functions similar to regionprops Matlab function



The BLOB FINDER CLASS:

```
class atsBlobFinder
{
public:
    atsBlobFinder(cv::Mat src)
    {
        numBlobs = 0;
        cv::Mat img; //must create a temporary Matrix to hold the gray scale or
wont work
        cv::cvtColor(src,img,CV_BGR2GRAY); //Convert image to GrayScale
```

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Blobs with opencv (internal function)
There are many open source opencv BLOB libraries that you can use. i have tried several of these, however because of the 64 bit machine that...

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For this example we need to add the following to the linker dependencies: opencv_core220d.lib opencv_highgui220d.lib opencv_imgproc220d.lib...

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In opencv "solvePnP" is used to find known points on a known 3D object. doing so the objects orientation relative to the camera co...

Load a Video in OpenCV
#include <stdlib.h> #include <stdio.h> #include <math.h> #include <string.h> #include<opencv2\opencv.hpp>...

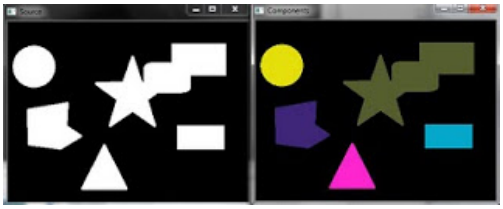
Live tracker

```
        img = img > 1; //create the binary image

////cv::adaptiveThreshold(src,src,64,ADAPTIVE_THRESH_MEAN_C,THRESH_BINARY,7,13);
//create a binary image

        findContours( img, contours, hierarchy, CV_RETR_CCOMP,
CV_CHAIN_APPROX_SIMPLE ); //Find the Contour BLOBS
        vector<Moments> _mu(contours.size() );
        vector<Point2f> _mc( contours.size() );
        for( int i = 0; i < contours.size(); i++ )
        {
            _mu[i] = moments( Mat(contours[i]), false );
            _mc[i] = Point2f( _mu[i].m10/_mu[i].m00 , _mu[i].m01/_mu[i].m00);
        }
        mu = _mu;
        mc = _mc;
        numBlobs = contours.size();
    }
    void Draw(cv::Mat &dst)
    {
        // iterate through all the top-level contours,
        // draw each connected component with its own random color
        for( int i = 0; i < contours.size(); i++ )
        {
            Scalar color(  rng.uniform(0,255),  rng.uniform(0,255),
rng.uniform(0,255) );
            drawContours( dst, contours, i, color, CV_FILLED, 8, hierarchy );
            // drawCross(mc[i],Scalar(0,0,255), 5,dst); //put a cross
            char buff[255];
            sprintf(buff, "%d", i);

            string text = std::string(buff);
            cv::putText(dst,text,mc[i],0,0.5,Scalar(0,0,255),1,8,false);
        }
    }
    int getNumBlobs()
    {
        //need to create a buffer for output or wrong reference
        /*char buff[255];
        sprintf(buff, "%d", numBlobs);*/
        return numBlobs;
    }
private:
    vector<vector<Point> > contours;
    vector<Vec4i> hierarchy;
    vector<Moments> mu;
    vector<Point2f> mc;
    int numBlobs;
};
```



```
#include <iostream>

// Include OpenCV
#include <opencv/cv.h>
#include <opencv/highgui.h>

using namespace cv;
```


About Me

saharkiz

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```
#define drawCross( center, color, d, drawing )                                \
            line( drawing, Point( center.x - d, center.y - d ),               \
            Point( center.x + d, center.y + d ), color, 2, CV_AA, 0); \
            line( drawing, Point( center.x + d, center.y - d ),               \
            Point( center.x - d, center.y + d ), color, 2, CV_AA, 0 )


RNG rng(12345);
int main( int argc, char** argv )
{
    Mat src;
    // the first command line parameter must be file name of binary
    // (black-n-white) image
    if(!(src=imread("pic6.png", CV_LOAD_IMAGE_GRAYSCALE)).data)
    {
        printf("OOOPS");
        waitKey(0);
        return -1;
    }



    Mat dst = Mat::zeros(src.rows, src.cols, CV_8UC3);

    src = src > 1;
    //cv::adaptiveThreshold(src,src,64,ADAPTIVE_THRESH_MEAN_C,THRESH_BINARY,7,13);
    namedWindow( "Source", 1 );
    imshow( "Source", src );

    vector<vector<Point> > contours;
    vector<Vec4i> hierarchy;

    findContours( src, contours, hierarchy,
        CV_RETR_CCOMP, CV_CHAIN_APPROX_SIMPLE );

    /// Get the moments
    vector<Moments> mu(contours.size() );
    vector<Point2f> mc( contours.size() );
    for( int i = 0; i < contours.size(); i++ )
        {
            mu[i] = moments( Mat(contours[i]), false );
            mc[i] = Point2f( mu[i].m10/mu[i].m00 , mu[i].m01/mu[i].m00);
        }

    // iterate through all the top-level contours,
    // draw each connected component with its own random color
    for( int i = 0; i < contours.size(); i++ )
    {
        Scalar color(  rng.uniform(0,255),  rng.uniform(0,255),  rng.uniform(0,255)
);
        drawContours( dst, contours, i, color, CV_FILLED, 8, hierarchy );
        // drawCross(mc[i],Scalar(0,0,255), 5,dst); //put a cross
         char buff[255];
        sprintf(buff, "%d", i);

         string text = std::string(buff);
        cv::putText(dst,text,mc[i],0,0.5,Scalar(0,0,255),1,8,false);
    }


    namedWindow( "Components", 1 );
    imshow( "Components", dst );
    waitKey(0);
}
```

Posted by saharkiz at 7:49 AM

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Labels: drawcontours, findcontours, moments, opencv

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1 comment:

Patrick J.P - Os visionários eram chamados de loucos. August 7, 2012 at 6:16 AM

Ty!
I loved your code.
you can use filter2D, threshold and Canny to make more precise !
ty again !

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